

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-10 (Canceled)

11. (Currently amended) A photoelectric conversion device, comprising:
a photoelectric conversion layer stacked above a structure; and
a backside electrode layer stacked above the photoelectric conversion layer,

wherein the structure comprises:

a substrate; and

a transparent electrode layer formed on at least a part of a surface region of the substrate, the transparent electrode layer having at least an opening portion within which the transparent electrode layer is absent,

wherein the opening portion does not electrically separate the transparent electrode layer, and

wherein the opening portion is not covered by the transparent electrode layer.

12. (Currently amended) A stacked photoelectric conversion device, comprising:

a first photoelectric conversion layer stacked above a structure;

a first intermediate layer stacked above the first photoelectric conversion layer;

a second photoelectric conversion layer stacked above the first intermediate layer such that the first intermediate layer is sandwiched between the first and second photoelectric conversion layers; and

a backside electrode layer stacked above the second photoelectric conversion layer,

wherein the structure comprises:

a substrate; and

a first transparent electrode layer formed on at least a part of a surface region of the substrate, the first transparent electrode layer having at least an opening portion within which the first transparent electrode layer is absent,

wherein the opening portion does not ~~electrically~~ separate the first transparent electrode layer, and

wherein the opening portion is not covered by the first transparent electrode layer.

13. (Previously presented) The device of claim 12, wherein the first intermediate layer has at least an opening portion within which the first intermediate layer is absent, and the first and second photoelectric conversion

layers sandwiching the first intermediate layer therebetween come into contact with each other through the opening portion of the first intermediate layer.

14. (Previously presented) The device of claim 12, wherein the first intermediate layer has at least an opening portion within which the first intermediate layer is absent, the device further comprising a second intermediate layer between the first intermediate layer and the second photoelectric conversion layer, the second intermediate layer covering the opening portion of the first intermediate layer.

15. (Original) The device of claim 14, wherein the second intermediate layer has a thinner film thickness than that of the first intermediate layer.

Claims 16-24 (Canceled)

25. (Previously presented) The device of claim 11, wherein the substrate is a transparent substrate such that the transparent electrode layer is formed on the surface region of the transparent substrate.

26. (Previously presented) The device of claim 25, wherein the transparent electrode layer has a texture structure on its surface.

27. (Previously presented) The device of claim 25, wherein
a haze index at 550nm wavelength of the transparent electrode layer
measured ranges is substantially at least 65% and
a light transmittance of a combination of the transparent substrate and
the transparent electrode layer is substantially at least 78%.

28. (Previously presented) The device of claim 25, wherein
an aperture ratio of the transparent electrode layer substantially ranges
between 0.8% to 37%, the aperture ratio being defined as a sum of areas of the
opening portions over a surface area divided by the surface area, the surface
area being an area of the surface region of the transparent substrate on which
the transparent electrode layer is formed, and

wherein an average radius of the opening portions over the surface area
is substantially equal to or less than 3.13 μm , in which a radius r_n of an n'th
opening portion is calculated by a formula $r_n = (S_n/\pi)^{1/2}$, n being an integer
from 1 to k in which k is a number of the opening portions, and S_n being an
area of the n'th opening portion.

Claim 29 (Canceled)

30. (Previously presented) The device of claim 25, wherein the opening
portions do not include grooves for separating a transparent electrode provided

for forming an integrated structure in which a plurality of photoelectric conversion cells are electrically connected in series.

31. (Previously presented) The device of claim 25, wherein the transparent electrode layer is a first transparent electrode layer, the device further comprising:

a second transparent electrode layer formed on the first transparent electrode layer so as to be formed in between the first transparent electrode layer and the photoelectric conversion layer, wherein

the second transparent electrode layer covers some or all of the opening portions.

32. (Previously presented) The device of claim 31, wherein a thickness of the second transparent electrode layer is less than a thickness of the first transparent electrode layer.

33. (Previously presented) The device of claim 31, wherein the thickness of the first transparent electrode layer ranges substantially between 500 nm and 1300 nm, and

the thickness of the second transparent electrode layer ranges substantially between 10 nm and 100 nm.

34. (Previously presented) The device of claim 31, wherein a synthesized sheet resistance of the first and the second transparent electrode substantially ranges between $5 \Omega/\square$ and $25 \Omega/\square$.

35. (Previously presented) The device of claim 11, wherein the substrate has a metal film, a transparent conductive film, or an insulating film on the surface thereof.

36. (Previously presented) The device of claim 25, wherein the photoelectric conversion layer is a first photoelectric conversion layer, the device further comprising:

an intermediate layer formed on the first photoelectric conversion layer;
and

a second photoelectric conversion layer formed on the intermediate layer.

37. (Previously presented) The device of claim 36, wherein the opening portions of the transparent electrode layer are first opening portions, and

the intermediate layer has a plurality of second opening portions within which the intermediate layer is absent.

38. (Previously presented) The device of claim 37, wherein the first and second photoelectric conversions layers are in contact through some or all second opening portions.

39. (Previously presented) The device of claim 37, wherein the intermediate layer is a first intermediate layer, the device further comprising:
a second intermediate layer formed on the first intermediate layer so as to be formed in between the first intermediate layer and the second photoelectric conversion layer, wherein
the second intermediate layer covers some or all of the second opening portions.

40. (Previously presented) The device of claim 36, wherein an aperture ratio of the intermediate layer substantially ranges between 0.5% and 90%, the aperture ratio being defined as a sum of widths of the intermediate layer opening portions over a cross section divided by a width of the cross section.

41. (Previously presented) The device of claim 40, wherein the aperture ratio of the intermediate layer substantially ranges between 16% and 63%.

42. (Previously presented) The device of claim 36, wherein the intermediate layer has a texture structure on its surface.

43. (Previously presented) The device of claim 36, wherein a short circuit current density of the first and second photoelectric conversion layers are substantially equal.

44. (New) The device of claim 11, wherein a plurality of opening portions are interspersed in the transparent electrode.

45. (New) The device of claim 12, wherein a plurality of opening portions are interspersed in the first transparent electrode.

46. (New) The device of claim 25, wherein the transparent substrate is made of glass or resin having heat resistance.

47. (New) The device of claim 25, wherein the transparent substrate is made of glass or resin having heat resistance, and is coated with an insulating film.